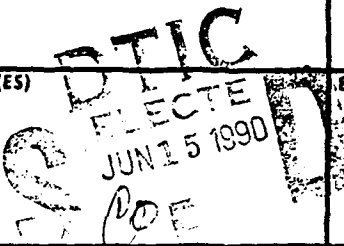


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INTERNATIONAL CONFERENCE ON LOW-ENERGY DISLOCATION STRUCTURES

HELD AT THE UNIVERSITY OF VIRGINIA
CHARLOTTESVILLE, VIRGINIA

AUGUST 13-17, 1989

FINAL REPORT

by
William A. Jesser
Conference Chairman



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INTRODUCTION

The scope and purpose of the second international conference on low-energy dislocation structures was to examine the extent to which the concepts of dislocation energy minimization per unit line length have been successfully incorporated into those areas of interest in which these concepts have traditionally been ignored, such as fracture, radiation damage, highly deformed materials and friction/wear. The fruitful and extensive application of the LEDS concepts in such areas as epitaxy and crystal growth serve as a useful basis for comparison. The first conference in 1986 brought participants from the various points of view together to explore the commonality and usefulness of the LEDS approach, which prior to the conference had seen limited application. During the three years between the first conference and the second one reported on here, the LEDS approach has become more widely applied and is finding usefulness broadly.

The success of the second international conference on this subject at the University of Virginia is demonstrated by the vigor with which the participants desire to have a third conference on this subject. A third conference is planned three years hence to be organized by Dr. G. Kostorz of the Institut für Angewandte Physik, ETH-Hönggerberg, Zürich, Switzerland. The underlying basis of the third conference will be much the same as for the second one. The remainder of this report collects some of the information about the conference not found in the published proceedings and announcements. The bound proceedings were reviewed in the high standard of the journal Materials Science and Engineering and were published as a special edition of that journal. Elsevier Applied Science Publishers LTD did an outstanding job of timely producing the hard bound volume with the highest quality of figures and artwork. The volume was available at the time of the conference. A special edition of Materials Science and Engineering carried the proceedings.

STATISTICAL INFORMATION

The bound volume of the proceedings of the conference contained 43 papers by 87 different authors representing 12 countries. There were three papers included in the conference but not completed in time for the bound proceedings, these were published in Materials Science and Engineering in a subsequent issue thereby bringing the overall totals to 46 papers by 49 different authors representing 13 countries. East block countries represented were China, East Germany, and USSR. No US government funds were used in support of attendees from these countries, however University support was available for the participant from China.

There were 63 participants including 8 student authors or coauthors who came from other Universities but were awarded scholarships from the Department of Materials Science at UVA to attend the conference. In addition there were 8 post doctoral participants for whom the registration fee was waived. These awards made possible the attendance of these participants who otherwise would have been unable to attend. Of the 46 papers by 49 different authors, 12 papers by 18 different authors came from the Oak Ridge Associated Universities.

The conference consisted of 6 half day sessions held in four days. The Low Energy Dislocation Structures topics were introduced by an invited lecture of 45 minutes duration. The wrap-up session consisted of remarks by organizing committee followed by a general discussion on the last day of the conference. This discussion period lasted about an hour and included expressions of the participants' desire to hold another LEDS conference perhaps three years hence.

FINANCIAL INFORMATION

The attached accounting in the appended financial statement is from the University of Virginia Division of Conferences and Institutes. They acted as financial accountants for the conference and provided the coordination and logistical support for the conference. As can be seen the financial support from our three sponsors was essential to the financial success of the conference. The funds provided from outside UVA were \$5000.00 from the Army Research Office, \$8000.00 from the Oak Ridge Associated Universities with the balance coming from the Center for Advanced Studies of the University of Virginia. For the support of our sponsors we are extremely grateful.

CONCLUDING COMMENTS

The conference was felt to be successful by the participants and accomplished its goal of assessing the extent to which the principles of LEDS have been applied to various fields. It was felt that much progress in this regard had been made but also that more should occur. The proceedings was judged outstanding and while the attendance was somewhat low (partly because of the disturbance in China) it was nevertheless an active group that vigorously participated in the discussions after the papers and at the conclusion of the conference. Overall the conference was felt to be very worthwhile and the workers in this field are looking forward to LEDS-III in 1992.